

**AMENDMENT TO THE CLAIMS:**

The following claim set replaces all prior versions, and listings, of claims in the application:

- 1.-26. (cancelled)
27. (new) A process for producing an oil comprising at least 35% of a desired C20 or C22 polyunsaturated fatty acid (PUFA) and having an anisidine value of less than 20, the process comprising:
- (a) deaerating an aqueous liquid comprising microbial cells; and
  - (b) obtaining the oil ~~or PUFA~~ from the microbial cells.
- 28.. (new) A process according to claim 27, wherein the cells are heated or pasteurized after deaeration in (a) but before stage (b).
29. (new) A process according to claim 27, wherein the aqueous liquid is a fermentation broth.
30. (new) A process according to claim 27, which further comprises:
- (c) extracting, purifying or isolating the oil.
31. (new) A process according to claim 27, wherein deaeration comprises at least one method selected from:
- a) application of vacuum or reduced pressure;
  - b) mechanical deaeration/de-gassing by stirring, vibration, or use of an accelerative or g-force;
  - c) viscosity change by dilution with a liquid, or by increase in temperature;
  - d) change in fermentation conditions by a reduction during fermentation in at least one of airlift, air sparging, oxygen supply, air supply, or stirring rate;
  - e) pH change;

- f) filtration;
  - g) gas displacement, with an inert gas;
  - h) chemical deaeration; and
  - i) time, wherein the aqueous liquid is allowed to rest under conditions such that oxygen or air diffuses out of the liquid.
32. (new) A process according to claim 27 wherein the deaeration is effected by reduced stirring and/or gas displacement.
33. (new) A process according to claim 32 wherein gas displacement is performed using a gas comprising either no oxygen or oxygen at a concentration level below atmospheric air.
34. (new) A process according to claim 33 wherein the gas is, or comprises, nitrogen.
35. (new) A process according to claim 27 wherein deaeration comprises subjecting the aqueous liquid to reduced pressure.
36. (new) A process according to claim 35, wherein said reduced pressure is a pressure of no more than 800 mbara.
37. (new) A process according to claim 35, wherein the aqueous liquid is deaerated using a vacuum or degassing pump, a parasol deaerator or an umbrella nozzle.
38. (new) A process according to claim 27, wherein deaeration results in a concentration of dissolved oxygen of less than 10 ppm.
39. (new) A process according to claim 38, wherein deaeration results in a concentration of dissolved oxygen of less than 5 ppm.

40. (new) A process according to claim 39, wherein deaeration results in a concentration of dissolved oxygen of less than 2 ppm.
41. (new) A process according to claim 27, wherein the process comprises subjecting the deaerated aqueous liquid to a temperature above 60 °C.
42. (new) A process according to claim 27, wherein the cells are heated or pasteurised at a temperature above 80 °C.
43. (new) A process according to claim 27 wherein the desired PUFA is a C20 or C22  $\Omega$ -3 or  $\Omega$ -6 PUFA.
44. (new) A process according to claim 43, wherein the desired PUFA is arachidonic acid (ARA).
45. (new) A process according to claim 43, wherein the desired PUFA is docosahexaenoic acid (DHA).
46. (new) A process according to claim 43, wherein the desired PUFA is eicosapentaenoic acid (EPA).
47. (new) A process according to claim 43, wherein the desired PUFA is dihomo- $\gamma$ -linolenic acid (DGLA).
48. (new) A process according to claim 44, wherein the cells are *Mortierella alpina* cells.
49. (new) A process according to claim 45, wherein the cells are *Cryptocodinium* cells.
50. (new) A process according to claim 45, wherein the cells are *Thraustochytrium* cells.

51. (new) A process according to claim 27, wherein the cells are yeast, bacterial, fungal or algal cells.
52. (new) A process according to claim 27, wherein the oil is a microbial oil.
53. (new) A process according to claim 29, wherein the cells are heated or pasteurized after deaeration in (a) but before stage (b), and deaerating results in a concentration of dissolved oxygen of less than 10 ppm.
54. (new) A process according to claim 53, wherein deaerating results in a concentration of dissolved oxygen of less than 5 ppm.
55. (new) A process according to claim 44, wherein the aqueous liquid is a fermentation broth, the cells are heated or pasteurized after deaeration in (a) but before stage (b), and deaerating results in a concentration of dissolved oxygen of less than 10 ppm.
56. (new) A process according to claim 55, wherein deaerating results in a concentration of dissolved oxygen of less than 5 ppm.
57. (new) A process according to claim 45, wherein the aqueous liquid is a fermentation broth, the cells are heated or pasteurized after deaeration in (a) but before stage (b), and deaerating results in a concentration of dissolved oxygen of less than 10 ppm.
58. (new) A process according to claim 57, wherein deaerating results in a concentration of dissolved oxygen of less than 5 ppm.
59. (new) A process according to claim 27, wherein the oil has an anisidine value of less than 15.

60. (new) A process according to claim 59, wherein the oil has an anisidine value of less than 10.
61. (new) A process according to claim 27, wherein the oil comprises at least 40% of a desired C20 or C22 polyunsaturated fatty acid (PUFA).
62. (new) An oil obtained by a process according to claim 27.
63. (new) A process for producing an oil comprising at least 35% of a desired C20 or C22 polyunsaturated fatty acid (PUFA), the process comprising:
  - (a) deaerating an aqueous liquid comprising microbial cells, resulting in a concentration of dissolved oxygen of less than 10 ppm; and
  - (b) obtaining the oil from the microbial cells.
64. (new) A process according to claim 63, wherein the cells are heated or pasteurized after deaeration in (a) but before stage (b).
65. (new) A process according to claim 63, wherein the aqueous liquid is a fermentation broth.
66. (new) A process according to claim 63, which further comprises:
  - (c) extracting, purifying or isolating the oil.
67. (new) A process according to claim 63, wherein deaeration comprises at least one method selected from:
  - a) application of vacuum or reduced pressure;
  - b) mechanical deaeration/de-gassing by stirring, vibration, or use of an accelerative or g-force;
  - c) viscosity change by dilution with a liquid, or by increase in temperature;
  - d) change in fermentation conditions by a reduction during fermentation in at least one of airlift, air sparging, oxygen supply, air supply, or stirring rate;

- e) pH change;
  - f) filtration;
  - g) gas displacement, with an inert gas;
  - h) chemical deaeration; and
  - i) time, wherein the aqueous liquid is allowed to rest under conditions such that oxygen or air diffuses out of the liquid.
68. (new) A process according to claim 63 wherein the deaeration is effected by reduced stirring and/or gas displacement.
69. (new) A process according to claim 68 wherein gas displacement is performed using a gas comprising either no oxygen or oxygen at a concentration level below atmospheric air.
70. (new) A process according to claim 68 wherein the gas is, or comprises, nitrogen.
71. (new) A process according to claim 63 wherein deaeration comprises subjecting the aqueous liquid to reduced pressure.
72. (new) A process according to claim 71, wherein said reduced pressure is a pressure of no more than 800 mbara.
73. (new) A process according to claim 71, wherein the aqueous liquid is deaerated using a vacuum or degassing pump, a parasol deaerator or an umbrella nozzle.
74. (new) A process according to claim 63, wherein deaeration results in a concentration of dissolved oxygen of less than 5 ppm.
75. (new) A process according to claim 74, wherein deaeration results in a concentration of dissolved oxygen of less than 2 ppm.

76. (new) A process according to claim 63, wherein the process comprises subjecting the deaerated aqueous liquid to a temperature above 60 °C.
77. (new) A process according to claim 63, wherein the cells are heated or pasteurised at a temperature above 80 °C.
78. (new) A process according to claim 63 wherein the desired PUFA is a C20 or C22  $\Omega$ -3 or  $\Omega$ -6 PUFA.
79. (new) A process according to claim 78, wherein the desired PUFA is arachidonic acid (ARA).
80. (new) A process according to claim 78, wherein the desired PUFA is docosahexaenoic acid (DHA).
81. (new) A process according to claim 78, wherein the desired PUFA is eicosapentaenoic acid (EPA).
82. (new) A process according to claim 78, wherein the desired PUFA is dihomo- $\gamma$ -linolenic acid (DGLA).
83. (new) A process according to claim 79, wherein the cells are *Mortierella alpina* cells.
84. (new) A process according to claim 80, wherein the cells are *Cryptocodinium* cells.
85. (new) A process according to claim 80, wherein the cells are *Thraustochytrium* cells.
86. (new) A process according to claim 63, wherein the cells are yeast, bacterial, fungal or algal cells.

87. (new) A process according to claim 63, wherein the oil is a microbial oil.
88. (new) A process according to claim 79, wherein deaerating results in a concentration of dissolved oxygen of less than 5 ppm.
89. (new) A process according to claim 88, wherein deaerating results in a concentration of dissolved oxygen of less than 2 ppm.
90. (new) A process according to claim 63, wherein the oil comprises at least 40% of a desired C20 or C22 polyunsaturated fatty acid (PUFA).
91. (new) An oil obtained by a process according to claim 63.
92. (new) A process for producing an oil comprising at least 35% of a desired C20 or C22 polyunsaturated fatty acid (PUFA), the process comprising:
  - (a) deaerating an aqueous liquid comprising microbial cells; and
  - (b) obtaining the oil from the microbial cells, wherein the cells are heated or pasteurised after deaeration in (a) but before stage (b).
93. (new) A process according to claim 92, wherein the aqueous liquid is a fermentation broth.
94. (new) A process according to claim 92, which further comprises:
  - (c) extracting, purifying or isolating the oil.
95. (new) A process according to claim 92, wherein deaeration comprises at least one method selected from:
  - a) application of vacuum or reduced pressure;
  - b) mechanical deaeration/de-gassing by stirring, vibration, or use of an accelerative or g-force;
  - c) viscosity change by dilution with a liquid, or by increase in temperature;



- d) change in fermentation conditions by a reduction during fermentation in at least one of airlift, air sparging, oxygen supply, air supply, or stirring rate;
  - e) pH change;
  - f) filtration;
  - g) gas displacement, with an inert gas;
  - h) chemical deaeration; and
  - i) time, wherein the aqueous liquid is allowed to rest under conditions such that oxygen or air diffuses out of the liquid.
96. (new) A process according to claim 92, wherein the deaeration is effected by reduced stirring and/or gas displacement.
97. (new) A process according to claim 96, wherein gas displacement is performed using a gas comprising either no oxygen or oxygen at a concentration level below atmospheric air.
98. (new) A process according to claim 96, wherein the gas is, or comprises, nitrogen.
99. (new) A process according to claim 92 wherein deaeration comprises subjecting the aqueous liquid to reduced pressure.
100. (new) A process according to claim 99, wherein said reduced pressure is a pressure of no more than 800 mbara.
101. (new) A process according to claim 100, wherein the aqueous liquid is deaerated using a vacuum or degassing pump, a parasol deaerator or an umbrella nozzle.
102. (new) A process according to claim 92, wherein deaeration results in a concentration of dissolved oxygen of less than 10 ppm.

103. (new) A process according to claim 102, wherein deaeration results in a concentration of dissolved oxygen of less than 5 ppm.
104. (new) A process according to claim 103, wherein deaeration results in a concentration of dissolved oxygen of less than 2 ppm.
105. (new) A process according to claim 104, wherein the process comprises subjecting the deaerated aqueous liquid to a temperature above 60 °C.
106. (new) A process according to claim 92, wherein the cells are heated or pasteurised at a temperature above 80 °C.
107. (new) A process according to claim 92 wherein the desired PUFA is a C20 or C22  $\Omega$ -3 or  $\Omega$ -6 PUFA.
108. (new) A process according to claim 107, wherein the desired PUFA is arachidonic acid (ARA).
109. (new) A process according to claim 107, wherein the desired PUFA is docosahexaenoic acid (DHA).
110. (new) A process according to claim 107, wherein the desired PUFA is eicosapentaenoic acid (EPA).
111. (new) A process according to claim 107, wherein the desired PUFA is dihomo- $\gamma$ -linolenic acid (DGLA).
112. (new) A process according to claim 108, wherein the cells are *Mortierella alpina* cells.
113. (new) A process according to claim 109, wherein the cells are *Cryptocodinium* cells.

- 114. (new) A process according to claim 109, wherein the cells are *Thraustochytrium* cells.
- 115. (new) A process according to claim 92, wherein the cells are yeast, bacterial, fungal or algal cells.
- 116. (new) A process according to claim 92, wherein the oil is a microbial oil.
- 117. (new) A process according to claim 92, wherein the oil comprises at least 40% of a desired C20 or C22 polyunsaturated fatty acid (PUFA).
- 118. (new) An oil obtained by a process according to claim 92.